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PTO/SB/05 (08-03)

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| | | |
|--|-------------------------------|--|
| UTILITY PATENT APPLICATION TRANSMITTAL (Only for new nonprovisional applications under 37 CFR 1.53(b)) | Attorney Docket No. | 678-1220 (P11028) |
| | First Inventor | Seung-Hoon NAM, et al. |
| | Title | Apparatus and Method for Performing Channel... |
| | Express Mail Label No. | EL995744037US |

22388 U.S. PTO
10/726118



| | |
|---|---|
| APPLICATION ELEMENTS See MPEP chapter 600 concerning utility patent application contents. | ADDRESS TO: Mail Stop Patent Application Commissioner for Patents, P. O. Box 1450 Alexandria, VA 22313-1450 |
|---|---|

- | | |
|--|--|
| <p>1. <input checked="" type="checkbox"/> Fee Transmittal Form (e.g., PTO/SB/17) (Submit an original and a duplicate for fee processing)</p> <p>2. <input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27.</p> <p>3. <input checked="" type="checkbox"/> Specification [Total Pages 28] (preferred arrangement set forth below) - Descriptive title of the invention - Cross Reference to Related Applications - Statement Regarding Fed sponsored R & D - Reference to sequence listing, a table, or a computer program listing appendix - Background of the Invention - Brief Summary of the Invention - Brief Description of the Drawings (if filed) - Detailed Description - Claim(s) - Abstract of the Disclosure</p> <p>4. <input checked="" type="checkbox"/> Drawing(s) (35 U.S.C. 113) [Total Sheets 7]</p> <p>5. Oath or Declaration [Total Pages 2] a. <input checked="" type="checkbox"/> Newly executed (original or copy) Copy from a prior application (37 CFR 1.63 (d)) b. <input type="checkbox"/> (for continuation/divisional with Box 18 completed) i. <input type="checkbox"/> DELETION OF INVENTOR(S) Signed statement attached deleting inventor(s) named in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).</p> <p>6. <input checked="" type="checkbox"/> Application Data Sheet. See 37 CFR 1.76</p> | <p>7. <input type="checkbox"/> CD-ROM or CD-R in duplicate, large table or Computer Program (Appendix)</p> <p>8. Nucleotide and/or Amino Acid Sequence Submission (if applicable, all necessary) a. <input type="checkbox"/> Computer Readable Form (CRF) b. Specification Sequence Listing on: i. <input type="checkbox"/> CD-ROM or CD-R (2 copies); or ii. <input type="checkbox"/> paper c. <input type="checkbox"/> Statements verifying identity of above copies</p> |
|--|--|

ACCOMPANYING APPLICATION PARTS

- | | |
|--|---|
| 9. <input checked="" type="checkbox"/> Assignment Papers (cover sheet & document(s)) | |
| 10. <input type="checkbox"/> 37 CFR 3.73(b) Statement (when there is an assignee) | <input type="checkbox"/> Power of Attorney |
| 11. <input type="checkbox"/> English Translation Document (if applicable) | |
| 12. <input checked="" type="checkbox"/> Information Disclosure Statement (IDS)/PTO-1449 | <input checked="" type="checkbox"/> Copies of IDS Citations |
| 13. <input type="checkbox"/> Preliminary Amendment | |
| 14. <input checked="" type="checkbox"/> Return Receipt Postcard (MPEP 503) (Should be specifically itemized) | |
| 15. <input checked="" type="checkbox"/> Certified Copy of Priority Document(s) (if foreign priority is claimed) | |
| 16. <input type="checkbox"/> Request and Certification under 35 U.S.C. 122 (b)(2)(B)(i). Applicant must attach form PTO/SB/35 or its equivalent. Ck. \$896.00 (filing fee) | |
| 17. <input checked="" type="checkbox"/> Other: Ck. \$40.00 (recording fee) | |

18. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in a preliminary amendment, or in an Application Data Sheet under 37 CFR 1.76:

☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No.: _____

Prior application information: Examiner _____ Group Art Unit: _____

For CONTINUATION OR DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 5b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

19. CORRESPONDENCE ADDRESS

| | | | |
|--|---|------------------|--|
| <input type="checkbox"/> Customer Number or Bar Code Label | (Insert Customer No. or Attach bar code label here) | or | <input checked="" type="checkbox"/> Correspondence address below |
| Name | Paul J. Farrell, Esq. | | |
| Address | DILWORTH & BARRESE, LLP 333 Earle Ovington Blvd. | | |
| City | Uniondale | State | New York |
| Country | U.S.A | Telephone | (516) 228-8484 |
| | | Fax | (516) 228-8516 |

| | | | |
|--------------------------|-----------------|--|------------------|
| Name (Print/Type) | Paul J. Farrell | Registration No. (Attorney/Agent) | 33,494 |
| Signature | | Date | December 2, 2003 |

CERTIFICATION UNDER 37 C.F.R. § 1.10

I hereby certify that this correspondence and the documents referred to as enclosed are being deposited with the United States Postal Service on date below in an envelope as "Express Mail Post Office to Addressee" Mail Label Number EL995744037US addressed to Mail Stop Patent Application, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Dated: December 2, 2003

(Name) Douglas M. Owens III

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Mail Stop Patent Application

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

UTILITY APPLICATION DATA SHEET UNDER 37 C.F.R. §1.76

Sir:

Transmitted herewith for filing is the patent application of

Inventor(s): **Seung-Hoon NAM, Chung-Yong LEE and Myeong-Cheol SHIN**

For: **APPARATUS AND METHOD FOR PERFORMING CHANNEL**
ESTIMATION IN AN ORTHOGONAL FREQUENCY DIVISION
MULTIPLEXING (OFDM) SYSTEM USING MULTIPLE ANTENNAS

Enclosed are:

- [X] 22 page(s) of specification
- [X] 1 page(s) of Abstract
- [X] 5 page(s) of claims
- [X] 7 sheets of drawings [X] formal [] informal
- [X] 2 page(s) of Declaration and Power of Attorney

ASSIGNEE NAME: **SAMSUNG ELECTRONICS CO., LTD. and YONSEI UNIVERSITY**
ASSIGNEE RESIDENCE: **GYEONGGI-DO, REPUBLIC OF KOREA and SEOUL,**
REPUBLIC OF KOREA, respectively

CERTIFICATION UNDER 37 C.F.R. § 1.10

I hereby certify that this New Application Transmittal and the documents referred to as enclosed therein are being deposited with the United States Postal Service on this date December 2, 2003, in an envelope as "Express Mail Post Office to Addressee" Mail Label Number EL 995744037US addressed to: Mail Stop Patent Application, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.


Douglas M. Owens III

☐ This application claims the benefit under 35 U.S.C. §119(e) of U.S. Provisional Application(s) No(s).:

APPLICATION NO(S).:

FILING DATE

☒ Certified copy of application

Country

Appln. No.

Filed

REPUBLIC OF KOREA

2002/28275

May 2, 2003

from which priority under Title 35 United States Code, § 119 is claimed

☒ is enclosed.

☐ will follow.

CALCULATION OF UTILITY APPLICATION FEE

| For | Number Filed | Number Extra | Rate | Basic Fee \$770.00 |
|--|--------------|--------------|--------|-----------------------|
| TOTAL CLAIMS | 18 | 0 | x 18 = | \$.00 |
| INDEPENDENT CLAIMS | 4 | 1 | x 86 = | \$86.00 |
| <input type="checkbox"/> Multiple Dep. Claim | 0 | 0 | 290 | \$.00 |
| | | | | TOTAL \$856.00 |

☐ Verified Statement of "Small Entity" Status Under 37 C.F.R. § 1.27. Reduced fees under 37 C.F.R. § 1.9(f) (50% of total) paid herewith \$.

- ☒ The amount of \$40.00 for recording the attached Assignment is enclosed as a separate check.
- ☒ A Check, in the amount of \$856.00, to cover the filing fee is attached.
- ☐ Charge fee to Deposit Account No. 04-1121.
TWO (2) COPIES OF THIS SHEET ARE ENCLOSED.
- ☒ Please charge any deficiency as well as any other fee(s), which may become due under 37 C.F.R. § 1.16 and 1.17, at any time during the pendency of this application, or credit any overpayment of such fee(s) to Deposit Account No. 04-1121. Also, in the event any extensions of time for responding are required for the pending application(s), please treat this paper as a petition to extend the time as required and charge Deposit Account No. 04-1121 therefor. TWO (2) COPIES OF THIS SHEET ARE ENCLOSED.

Respectfully submitted,



Paul J. Farrell
Reg. No. 33,494
Attorney for Applicant(s)

Date: December 2, 2003

DILWORTH & BARRESE, LLP

333 Earle Ovington Blvd.
Uniondale, NY 11553
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Fax No. (516) 228-8516

PJF/DMO/lah

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FEE TRANSMITTAL

for FY 2003

Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$ 896.00)

Complete if Known

| | |
|----------------------|------------------------|
| Application Number | |
| Filing Date | Concurrent herewith |
| First Named Inventor | Seung-Hoon NAM, et al. |
| Examiner Name | |
| Art Unit | |
| Attorney Docket No. | 678-1220 (P11028) |

METHOD OF PAYMENT (check all that apply)

☒ Check ☐ Credit card ☐ Money Order ☐ Other ☐ None☒ Deposit Account:Deposit Account Number
Deposit Account Name

04-1121

Dilworth & Barrese LLP

The Commissioner is authorized to: (check all that apply)

☐ Charge fee(s) indicated below ☒ Credit any overpayments☒ Charge any additional fee(s) during the pendency of this application☐ Charge fee(s) indicated below, except for the filing fee to the above-identified deposit account.

FEE CALCULATION

1. BASIC FILING FEE

| Large Entity Fee Code (\$) | Small Entity Fee Code (\$) | Fee Description | Fee Paid |
|----------------------------|----------------------------|------------------------|-------------|
| 1001 770 | 2001 385 | Utility filing fee | 770 |
| 1002 340 | 2002 170 | Design filing fee | |
| 1003 530 | 2003 265 | Plant filing fee | |
| 1004 770 | 2004 385 | Reissue filing fee | |
| 1005 160 | 2005 80 | Provisional filing fee | |
| SUBTOTAL (1) | | | (\$ 770.00) |

2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

| Total Claims | Extra Claims | Fee from below | Fee Paid |
|----------------------|--------------|----------------|----------|
| 18 | -20** = 0 | 18.00 | 0.00 |
| Independent Claims 4 | -3** = 1 | 86 | 86.00 |
| Multiple Dependent | | 290 | 0 |

| Large Entity Fee Code (\$) | Small Entity Fee Code (\$) | Fee Description |
|----------------------------|----------------------------|--|
| 1202 18 | 2202 9 | Claims in excess of 20 |
| 1201 86 | 2201 43 | Independent claims in excess of 3 |
| 1203 290 | 2203 145 | Multiple dependent claim, if not paid |
| 1204 86 | 2204 43 | ** Reissue independent claims over original patent |
| 1205 18 | 2205 9 | ** Reissue claims in excess of 20 and over original patent |

SUBTOTAL (2) (\$ 86.00)

**or number previously paid, if greater; For Reissues, see above

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Small Entity

| Fee Code (\$) | Fee Code (\$) | Fee Description | Fee Paid |
|---------------|---------------|--|----------|
| 1051 130 | 2051 65 | Surcharge - late filing fee or oath | |
| 1052 50 | 2052 25 | Surcharge - late provisional filing fee or cover sheet | |
| 1053 130 | 1053 130 | Non-English specification | |
| 1812 2,520 | 1812 2,520 | For filing a request for <i>ex parte</i> reexamination | |
| 1804 920* | 1804 920* | Requesting publication of SIR prior to Examiner action | |
| 1805 1,840* | 1805 1,840* | Requesting publication of SIR after Examiner action | |
| 1251 110 | 2251 55 | Extension for reply within first month | |
| 1252 420 | 2252 210 | Extension for reply within second month | |
| 1253 950 | 2253 475 | Extension for reply within third month | |
| 1254 1,480 | 2254 740 | Extension for reply within fourth month | |
| 1255 2,010 | 2255 1,005 | Extension for reply within fifth month | |
| 1401 330 | 2401 165 | Notice of Appeal | |
| 1402 330 | 2402 165 | Filing a brief in support of an appeal | |
| 1403 290 | 2403 145 | Request for oral hearing | |
| 1451 1,510 | 1451 1,510 | Petition to institute a public use proceeding | |
| 1452 110 | 2452 55 | Petition to revive - unavoidable | |
| 1453 1,330 | 2453 665 | Petition to revive - unintentional | |
| 1501 1,330 | 2501 665 | Utility issue fee (or reissue) | |
| 1502 480 | 2502 240 | Design issue fee | |
| 1503 640 | 2503 320 | Plant issue fee | |
| 1460 130 | 1460 130 | Petitions to the Commissioner | |
| 1807 50 | 1807 50 | Processing fee under 37 CFR 1.17(q) | |
| 1806 180 | 1806 180 | Submission of Information Disclosure Stmt | |
| 8021 40 | 8021 40 | Recording each patent assignment per property (times number of properties) | 40 |
| 1809 770 | 2809 385 | Filing a submission after final rejection (37 CFR 1.129(a)) | |
| 1810 770 | 2810 385 | For each additional invention to be examined (37 CFR 1.129(b)) | |
| 1801 770 | 2801 385 | Request for Continued Examination (RCE) | |
| 1802 900 | 1802 900 | Request for expedited examination of a design application | |

Other fee (specify)

*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) (\$ 40.00)

SUBMITTED BY

Name (Print/Type) Paul J. Farrell

Signature

Registration No. 33,494
(Attorney/Agent)

(Complete if applicable)

Telephone (516) 228-8484

Date

December 2, 2003

CERTIFICATION UNDER 37 C.F.R. §1.10

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Dated: December 2, 2003

(Name) Douglas M. Owens III